OPTIONAL TRAINING CURRICULUM

Application of End Tidal CO_2 Monitoring

KY Ambulance Service Specific Continuing Education Curriculum for the Emergency Medical Technician Basic (EMT-B) using a Non-invasive Monitoring Device

INSTRUCTOR MANUAL

Instructions Preparatory to Meeting the EMT-B Scope of Practice Requirements

Kentucky Board of Emergency Medical Services
Pursuant to 202 KAR 7:060

This curriculum relates to the Department of Transportation (D.O.T.) 1994 EMT Basic National Standard Curriculum from the Module 8 Elective Advanced Airway Management component, and is designed as a KY optional Supplemental curriculum referenced in 202 KAR 7:060 and 7:080.

INTRODUCTION

For use in **an EMT-B continuing education course supplemental to** the respiratory section of the Emergency Medical Technician (EMT-B) initial training course. Performance of the skill will be ambulance service specific and the training is primarily designed for EMT-Bs to assist an Advanced Life Support (ALS) provider in patient care.

OBJECTIVE:

This curriculum is an optional, KY training Module commencing with the effective date of 202 KAR 7:060. An EMT-B working for an ambulance service contracted with a physician medical director and offering this procedure in patient care shall be required to obtain this training through continuing education. This curriculum, or an equivalent curriculum, that has been submitted to, reviewed and recommended to the Kentucky Board of Emergency Medical Services for approval, is to be used. Training through continuing education is for a person who received their initial EMT-B training prior to the introduction of this curriculum as acceptable training and procedure for use within the KY EMT-B scope of practice.

Psychomotor

The student shall be able to appropriately apply an end tidal CO2 monitoring device to the patient.

WORK ENVIRONMENT: With ambulance service having written agreement with physician Medical Director.

LEAD INSTRUCTOR QUALIFICATIONS: Minimum, KY EMT-B Instructor. If this person does not additionally have ALS credentials, an adjunct faculty holding current ALS credentials may need to be recruited to teach this lesson based on this curriculum.

RECOMMENDED MINIMUM TIME TO COMPLETE: Minimum of twenty (20) minutes which combines part Lecture overview and part Skills Practice.

EQUIPMENT:

End Tidal CO2 monitor
Endotracheal tube with a standard connector
Ventilation device

OVERVIEW

Emphasize to the EMT-B: Treat the patient, not the device!

I. Basic principles of end tidal CO2 monitoring (capnography)
   A. Exhaled air from the lungs will contain a certain amount of CO2.
   B. If an endotracheal tube is placed in the trachea - the ETCO2 monitor will detect this and reflect the placement of the tube by changing color or giving an electronic signal.
   C. If an endotracheal tube is placed in the esophagus - the ETCO2 monitor will not detect exhaled CO2 and therefore not change color or give an electronic signal.

II. Types of ETCO2 monitors
   A. Colorimetric disposable end tidal CO2 detector.
   B. Electronic end tidal CO2 detector.
   C. Unit sets that contain pulse oximetry, ETCO2 detection, blood pressure, pulse rate, respiratory rate, and temperature monitoring.

III. Placement of ETCO2 monitors
   A. The device is attached in-line between the endotracheal tube connector and the ventilation device.
   B. Proper placement is confirmed by a color change in the colorimetric wheel or by a light on the electronic monitor.

IV. Confirmation of Endotracheal tube placement
   A. Ventilate the patient with the ventilation device. The ETCO2 monitor, if using the disposable colorimetric monitor, will change colors.
   B. If using an electronic ETCO2 monitor, a light will appear on the monitor confirming tracheal placement.

V. Troubleshooting
   A. Color does not change if using a disposable ETCO2 monitor - possible esophageal intubation.
   B. Light does not appear on the electronic monitor
      1. Patient cable not connected to monitor
      2. Low battery

SKILL SEQUENCE

1. After intubation per ALS provider, place ETCO2 detector in line at the standard connector at the proximal end of the intubation tube.
2. Ventilate the patient with the ventilation device.
3. Observe for change in color or light on the monitoring device.
4. Troubleshoot for any simple errors.